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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/676,726 | 10/01/2003 | Richard D. Thornton | 102320-0037 | 2945 |
| 21125 | 7590 | 03/11/2005 | | EXAMINER |
| NUTTER MCCLENNEN & FISH LLP WORLD TRADE CENTER WEST 155 SEAPORT BOULEVARD BOSTON, MA 02210-2604 | | | MULLINS, BURTON S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2834 | |

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/676,726 | THORNTON ET AL. |
| | Examiner | Art Unit |
| | Burton S. Mullins | 2834 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 December 2004 and 03 February 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 17 and 18 is/are allowed.
- 6) Claim(s) 1-3,5-8 and 10-16 is/are rejected.
- 7) Claim(s) 4 and 9 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 December 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 5-6, 8 and 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Raschbichler et al. (US 5,370,059). Raschbichler teaches a magnetic suspension system comprising: a guideway (lateral support) 1 comprising one or more ferromagnetic rails (equipment elements) 2, at least one of which further comprises windings 3 for a linear synchronous motor (Figs. 1&2; c.3, lines 57-60); a vehicle 5 comprising one or more arrays of magnets 4 (Fig. 1; magnets arranged on both sides of vehicle, c.4, lines 13-14) at least one of which arrays of magnets effects: i) magnetic attraction forces to at least one guideway rail 2 (c..4, lines 4-14); ii) lateral restoring forces on the vehicle 5 (inherent; c.1, lines 51-56) without the need for additional structure (there are no wheels or rollers); and effects longitudinal forces in response to electrical current in one or more of the windings 3 (synchronous motor 1/2/3 drives vehicle 5), and at least one control coil 7 wound around the magnets 4 effecting a substantially stable vertical gap (c.4, lines 8-11).

Regarding claims 2 and 13, control systems for both the synchronous motor windings 3 and vehicle control coils 7 are inherent in Raschbichler in order to achieve movement of the vehicle and excitation of the synchronous motor field. Regarding claims 5 and 10, plural magnets on both sides of the vehicle (c.4, lines 13-14) would inherently any of damp heave, roll, sway and/or yaw forces. Regarding claims 6 and 8, these functional limitations are inherent in Raschbichler's linear synchronous motor 1/2/3 and vehicle magnet/exciter system 4/7.

Regarding claim 11, the magnet arrays are permanent magnets in Raschbichler.

Regarding claims 13 and 16, the inherent synchronous motor winding 3 control accelerates the vehicle, while the inherent vehicle control coil 7 control excites the field and maintains the air gap.

Regarding claims 14-15, the functional language of lateral restoring forces sufficient to allow at least one of negotiating turns and resisting lateral wind force is inherent.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raschbichler (US 5,370,059) in view of Kohm et al. (US 3,871,301). Raschbichler does not teach a position sensing system.

Kolm teaches a stabilization and ride control system for a suspended vehicle propelled by a linear synchronous motor including position sensors (c.2, lines 18-26) to monitor vehicle motion and supply signals that permit control of vehicle behavior.

It would have been obvious to modify Raschbichler and provide position sensors per Kolm since these would have been desirable to monitor vehicle motion and supply signals that permit control of vehicle behavior.

Allowable Subject Matter

5. Claims 4 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither Raschbichler nor the remaining prior art teach or suggest “lateral offset” placement of at least one pair of the vehicle magnets in the manner shown in Fig.9 of applicant’s disclosure, where the “lateral offset” is defined as offset relative to the rail (p.6, lines 34-36; Fig.9). Raschbichler teaches magnets on either side of the vehicle and therefore offset relative to the central axis of the system, but not offset relative to a rail.

6. Claims 17 and 18 are allowed. Neither Raschbichler nor the remaining prior art teach or suggest “lateral offset” placement of at least one pair of the vehicle magnets in the manner shown in Fig.9 of applicant’s disclosure, where the “lateral offset” is defined as offset relative to the rail (p.6, lines 34-36; Fig.9). Raschbichler teaches magnets on either side of the vehicle and therefore offset relative to the central axis of the system, but not offset relative to a rail.

Response to Arguments

7. Applicant's arguments with respect to claims 1-3, 5-8 and 10-16 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

8. The information disclosure statements submitted on 16 August 2004, 13 September 2004, and 03 January 2005 have been considered by the examiner.

Drawings

9. The drawings were received on 16 December 2004. However, the drawings are still objected to because Figs. 4, 7&8—while suitable for examination—are nevertheless indistinct and appear to have been photocopied, so that structural details are impossible to distinguish. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins
Primary Examiner
Art Unit 2834

3/7/05